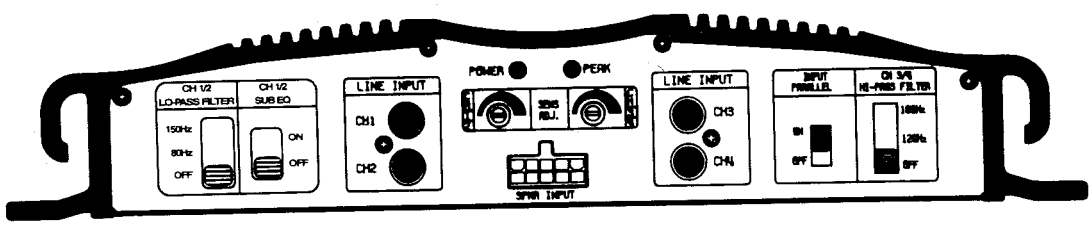
SERVICE MANUAL

XA-7500

TRI-MODE
AUTO SOUND AMPLIFIER



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Sherwood

Specifications

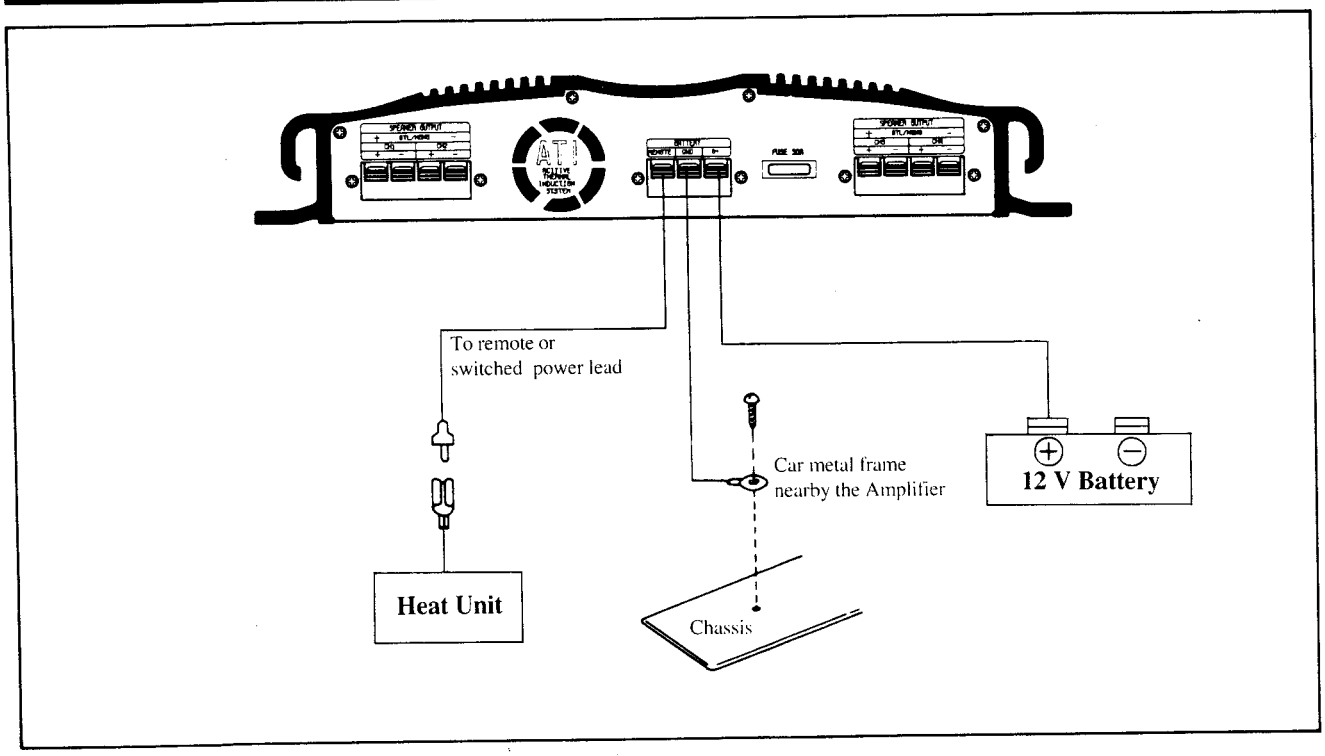
Amplifier Section		
Average Power Output/CH into 4 ohms	Stereo	60 W x 4 CH
at 20Hz - 20kHz, less than 0.1% THD	Mono	150 W x 2 CH
Average Power Output/CH into 2 ohms	Stereo	90 W x 4 CH
at 20Hz - 20kHz, less than 0.3% THD	Mono	185 W x 2 CH
Frequency Response (-3 dB)		5 Hz - 100 kHz
Sub Bass EQ. Response at 60Hz		+8 dB
Low Pass Filter at 80Hz, 150Hz		-12 dB per octave
High Pass Filter at 120Hz, 180Hz		-12 dB per octave
S/N Ratio		105 dB
Input Sensitivity	Line Input	200 mV - 1 V
	Speaker Input	1 - 5 V
Damping Factor		120
Load Impedance		2 - 8 ohms

General	
Operating Voltage (11 - 16V allowable)	14.4 V DC Negative Ground
Fuse	30 A
Demensions(W x H x D)	322 x 57 x 352 mm (12-11/16 x 2-1/4 x 13-7/8 inches)
Weight (Net)	5 Kg (11 lbs)

Note: Specifications and design subject to change without notice for improvements.

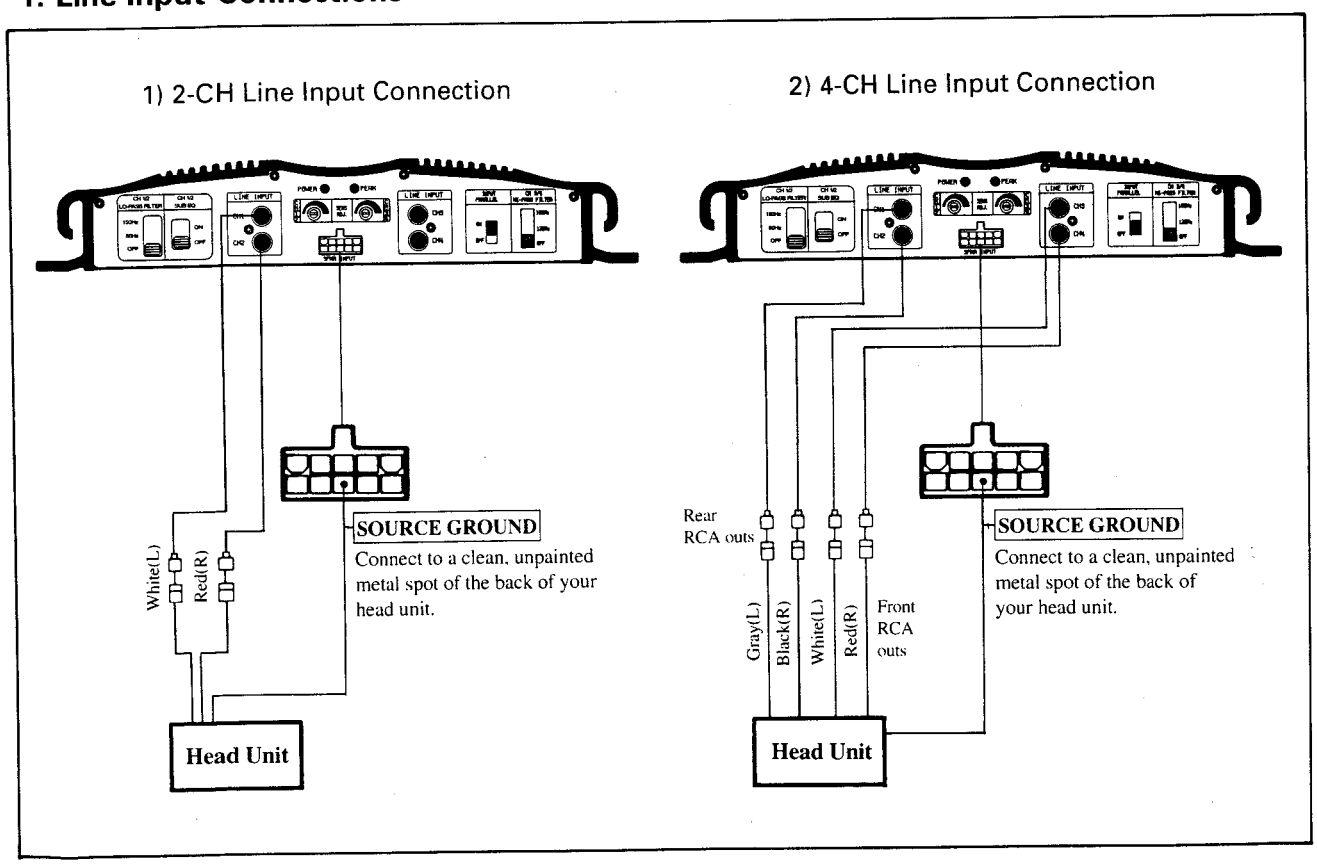
Connections

1. POWER CONNECTIONS



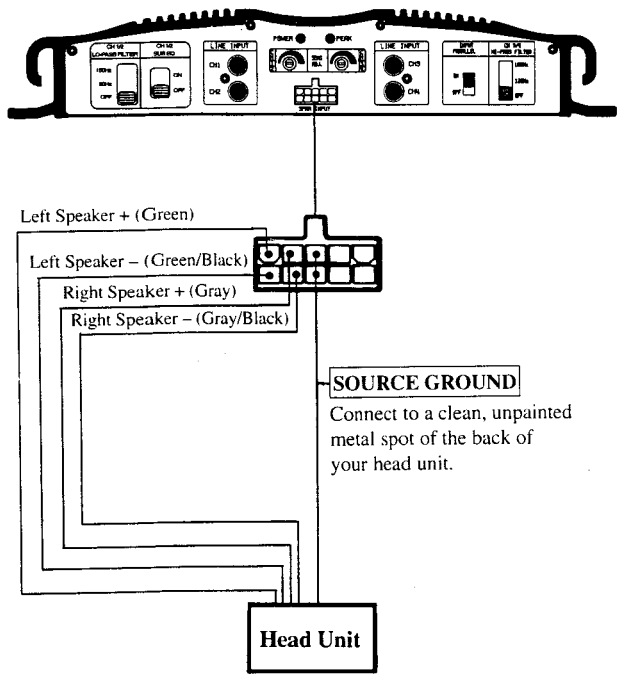
2. INPUT CONNECTIONS

1. Line Input Connections

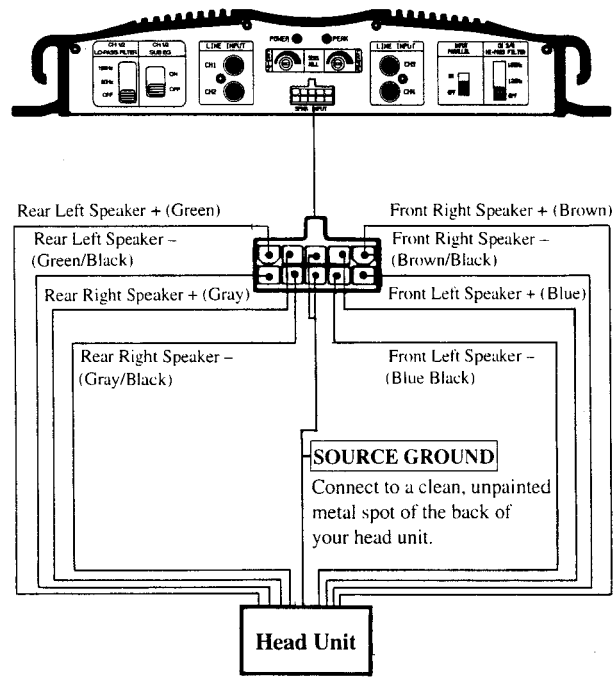


2. Speaker Input Connections

1) 2-CH Speaker Input Connection

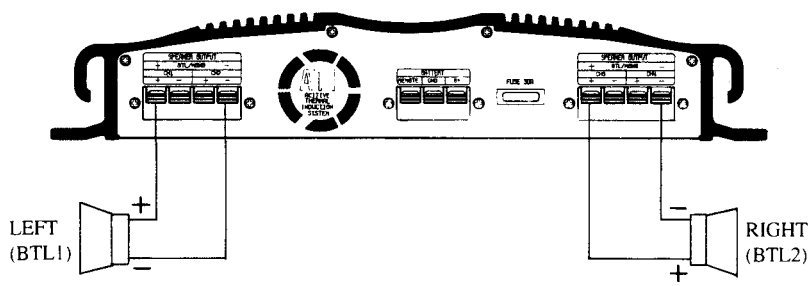

Left Speaker + (Green)
Left Speaker – (Green/Black)
Right Speaker + (Gray)
Right Speaker – (Gray/Black)
SOURCE GROUND
Connect to a clean, unpainted metal spot of the back of your head unit.
Head Unit

2) 4-CH Speaker Input Connection


Rear Left Speaker + (Green)
Rear Left Speaker – (Green/Black)
Rear Right Speaker + (Gray)
Rear Right Speaker – (Gray/Black)
Front Right Speaker + (Brown)
Front Right Speaker – (Brown/Black)
Front Left Speaker + (Blue)
Front Left Speaker – (Blue Black)
SOURCE GROUND
Connect to a clean, unpainted metal spot of the back of your head unit.
Head Unit

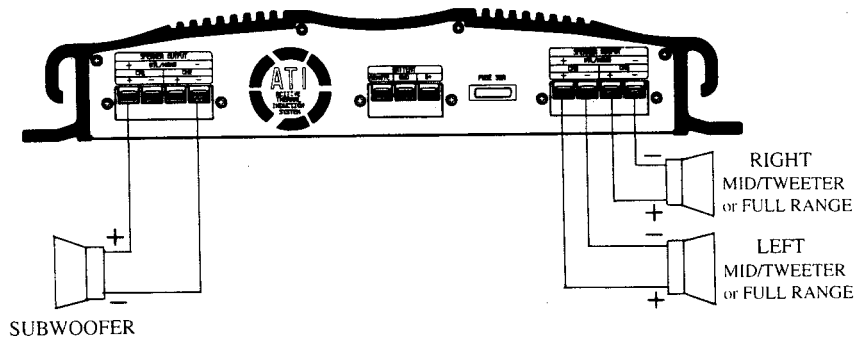
3. SPEAKER CONNECTIONS

1) Bridged Speaker System using 2-CH or 4-CH inputs.



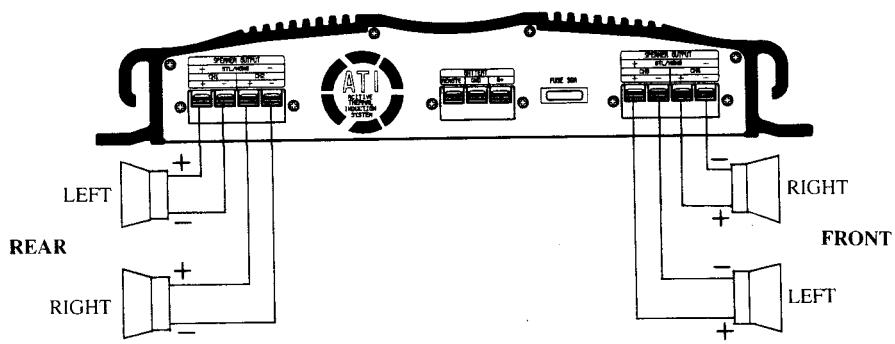
SWITCHES	SETTINGS	
PARALLEL INPUT	2-CH inputs	ON
	4-CH inputs	OFF
SUB EQ	ON or OFF	
LOW PASS FILTER	OFF	
HIGH PASS FILTER	OFF	

2) Stereo Speaker System with Bridged Subwoofer using 2-CH or 4-CH inputs.



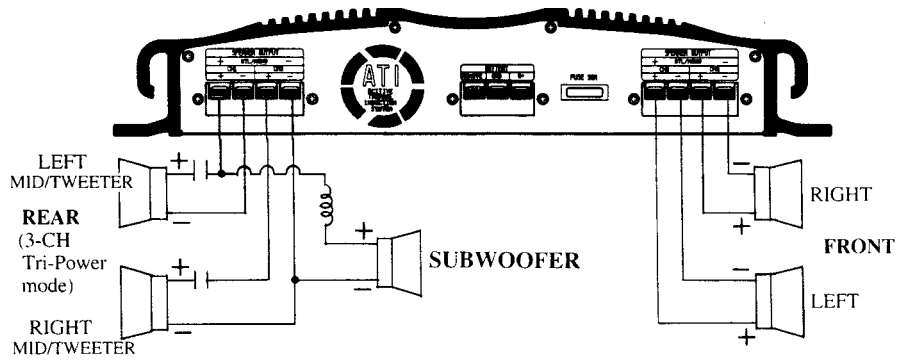
SWITCHES	SETTINGS	
PARALLEL INPUT	2-CH inputs	ON
	4-CH inputs	OFF
SUB EQ	ON or OFF	
LOW PASS FILTER	80 or 150 Hz	
HIGH PASS FILTER	MID/TWEETER	120 or 180 Hz
	FULL RANGE	OFF

3) 4-Channel Speaker System using 2-CH or 4-CH inputs.



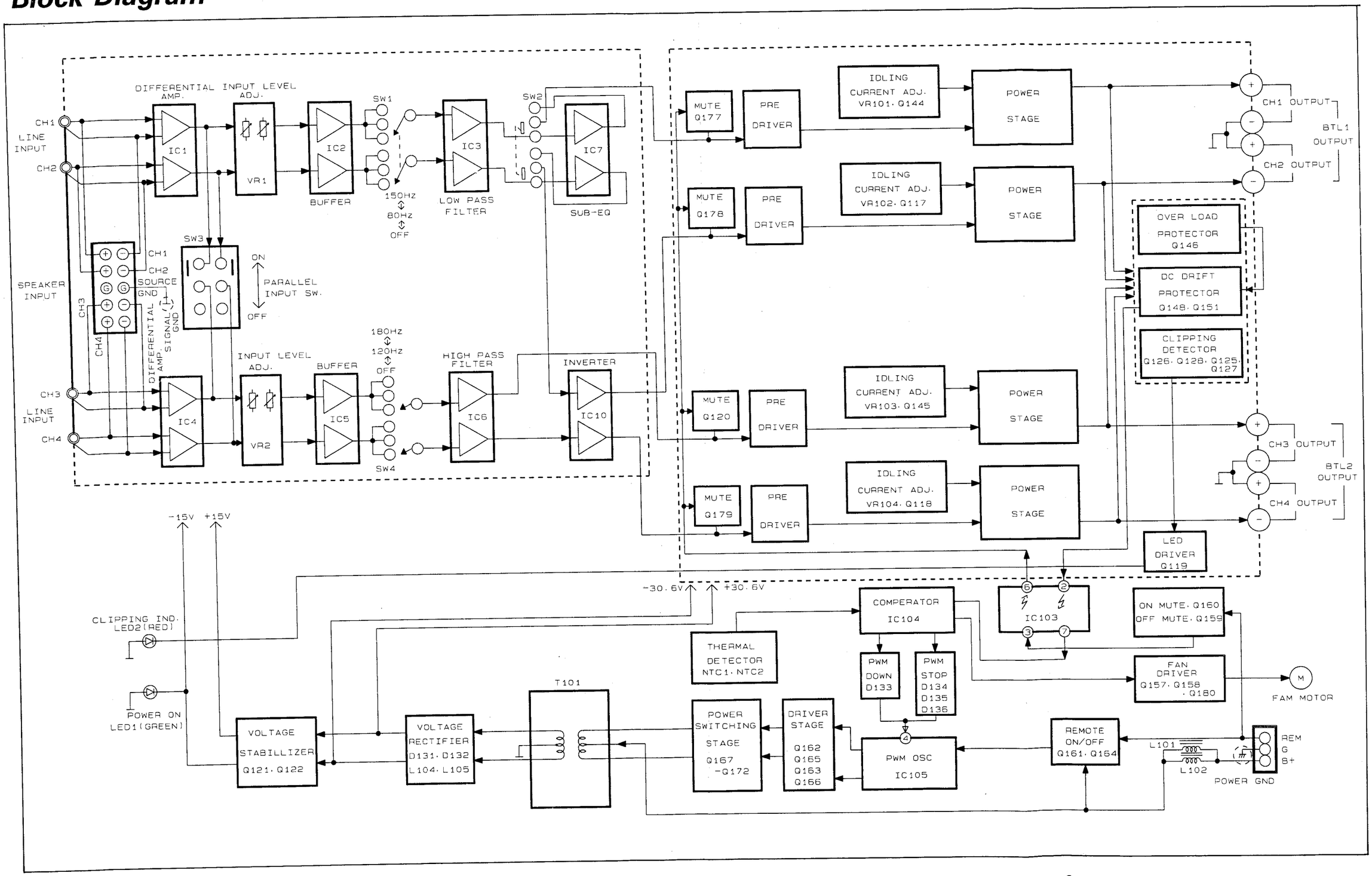
SWITCHES	SETTINGS	
PARALLEL INPUT	2-CH inputs	ON
	4-CH inputs	OFF
SUB EQ	ON or OFF	
LOW PASS FILTER	OFF	
HIGH PASS FILTER	OFF	

4) 4-Channel Speaker System with Bridged Subwoofer using 2-CH or 4-CH inputs.



SWITCHES	SETTINGS	
PARALLEL INPUT	2-CH inputs	ON
	4-CH inputs	OFF
SUB EQ	ON or OFF	
LOW PASS FILTER	OFF	
HIGH PASS FILTER	OFF	

Block Diagram



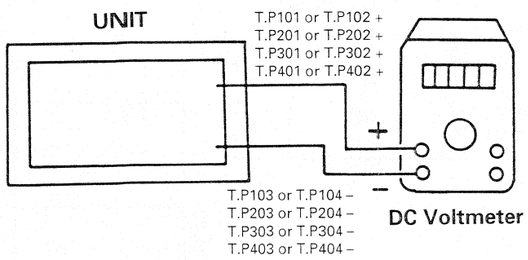
Adjustment Procedures

1. IDLING CURRENT ADJUSTMENT

1) Setting :

a. Connect the Power Supply, Ground and remote control.
b. No Signal Input State.

2) Connections :

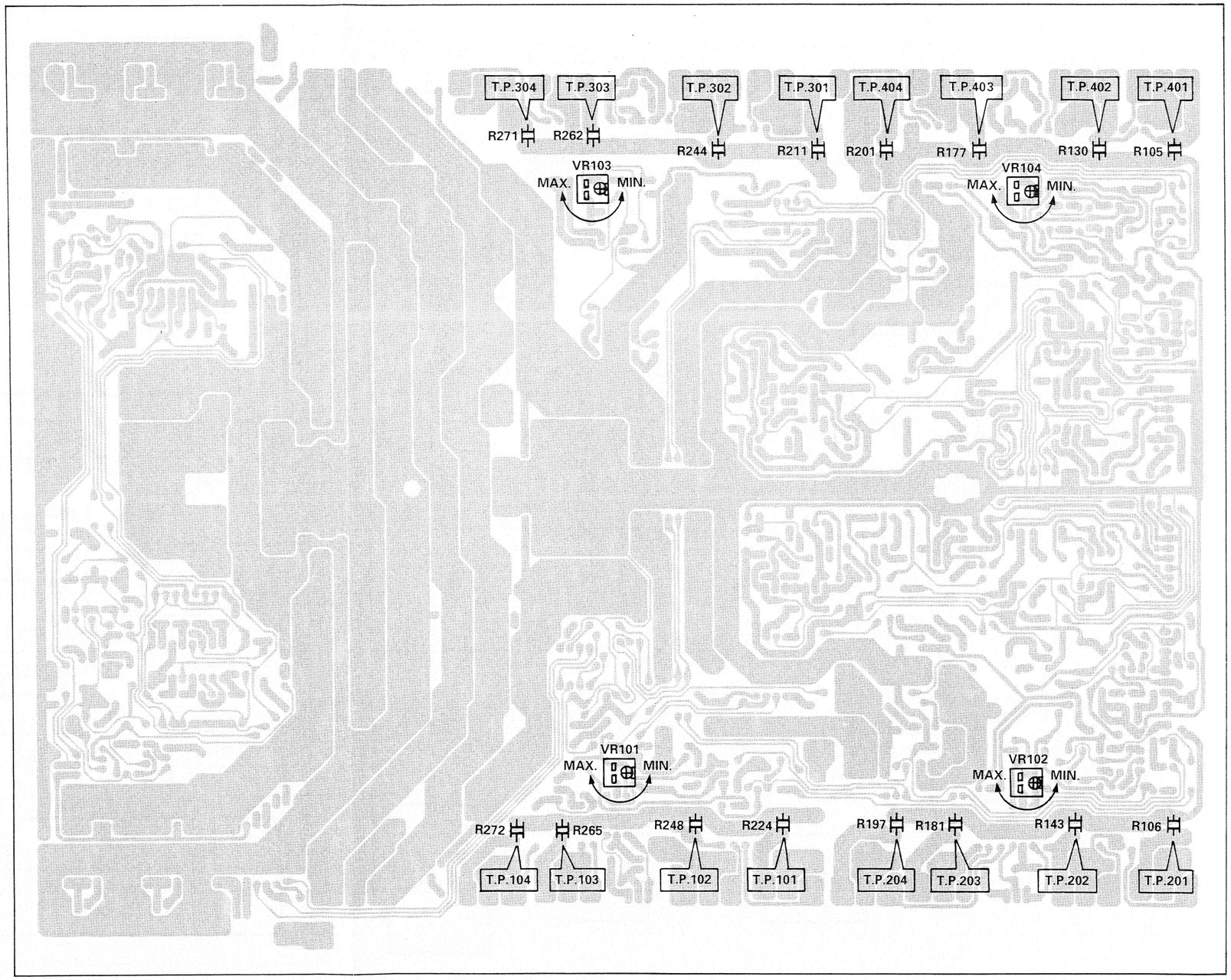


a. T.P101 (+), T.P103 (–)
b. T.P102 (+), T.P104 (–)
c. T.P201 (+), T.P203 (–)
d. T.P202 (+), T.P204 (–)
e. T.P301 (+), T.P303 (–)
f. T.P302 (+), T.P304 (–)
g. T.P401 (+), T.P403 (–)
h. T.P402 (+), T.P404 (–)

3) Adjustment Procedures :

Adjust the solid-state variable resistor VR101 to obtain 1.0±0.5mV [between T.P101 (T.P102) and T.P103(T.P104)] on the DC voltmeter.
In the same methed, adjust the VR102, VR103 and VR104 to also obtain 1.0±0.5mV [between T.P201 (T.P202), T.P301(T.P302), T.P401 (T.P402) and T.P203(T.P204), T.P303(T.P304), T.P403(T.P404)] on the DC voltmeter.

2. ADJUSTMENT LOCATIONS



–Bottom View–

Electrical Parts Lists

Ref. No	Part No.	Description	Position	Q'ty
Assembly PCB, Front				
Integrated Circuits				
IC1	2168020106	NJM2068DD, Dual OP Amplifier	B1	1
IC2	2168020106	NJM2068DD, Dual OP Amplifier	B2	1
IC3	2168000114	KA4558C, Dual OP Amplifier	A1	1
IC4	2168020106	NJM2068DD, Dual OP Amplifier	D1	1
IC5	2168020106	NJM2068DD, Dual OP Amplifier	D2	1
IC6	2168000114	KA4558C, Dual OP Amplifier	E1	1
LEDs				
LED1	2308220306	SLR 54GC3, Power Indicator, Green	C2	1
LED2	2308220109	SLR 54URC3, Peak Indicator, Red	C2	1
Connectors				
CN1	4428527675	Connector Plug 10P, 5566-10A, Straight	C2	1
CN2	435107128882	Connector Ass'y 7P, 5264-35023, DL R#26	A1	1
CN3	435107128882	Connector Ass'y 7P, 5264-35023, DL R#26	E1	1
Switches				
SW1	4618009410	Switch Slide, SSSA043 GA011, Low Pass Filter	A1/2	1
SW2	4618008010	Switch Slide, SSSA042 GA011, Sub EQ Booster	A1	1
SW3	4618008010	Switch Slide, SSSA042 GA011, Input Parallel	E1	1
SW4	4618009410	Switch Slide, SSSA043 GA011, High Pass Filter	E1/2	1
Semi-Fixed Variable Resistors				
VR1/VR2	3248050346	VR 20k(B), Input Sense Adjustment	C1/2	2
Resistors				
R1	3069103970	Carbon Film 10k ohm 1/5 W J	B1	1
R2	3069393970	Carbon Film 39k ohm 1/5 W J	B/C1	1
R3	3069393970	Carbon Film 39k ohm 1/5 W J	C1	1
R4/R5	3069104970	Carbon Film 100k ohm 1/5 W J	B1	2
R6 - R8	3069103970	Carbon Film 10k ohm 1/5 W J	B1	3
R9	3029101470	Metal Film 100 ohm 1 W J	C1	1
R10	3069393970	Carbon Film 39k ohm 1/5 W J	C1	1
R11/R12	3069104970	Carbon Film 100k ohm 1/5 W J	B1	2
R13	3029101470	Metal Film 100 ohm 1 W J	C1	1
R14	3069393970	Carbon Film 39k ohm 1/5 W J	B1	1
R15/R16	3029101470	Metal Film 100 ohm 1 W J	C1	2
R17	3069393970	Carbon Film 39k ohm 1/5 W J	C1	1
R18	3069393970	Carbon Film 39k ohm 1/5 W J	D1	1
R19 - R21	3069103970	Carbon Film 10k ohm 1/5 W J	D1	3
R22	3069393970	Carbon Film 39k ohm 1/5 W J	D1	1

Ref. No	Part No.	Description					Position	Q'ty
R23	3069393970	Carbon	Film	39k ohm	1/5 W	J	C1	1
R24/R25	3069104970	Carbon	Film	100k ohm	1/5 W	J	D1	2
R26 - R28	3069103970	Carbon	Film	10k ohm	1/5 W	J	D1	3
R29/R30	3069104970	Carbon	Film	100k ohm	1/5 W	J	D1	2
R31 - R34	3069103970	Carbon	Film	10k ohm	1/5 W	J	B1	4
R35/R36	3069103970	Carbon	Film	10k ohm	1/5 W	J	D1	2
R37	3069101970	Carbon	Film	100 ohm	1/5 W	J	B2	1
R38	3069222970	Carbon	Film	2.2k ohm	1/5 W	J	B2	1
R39	3069222970	Carbon	Film	2.2k ohm	1/5 W	J	B1	1
R40	3069101970	Carbon	Film	100 ohm	1/5 W	J	A2	1
R41	3069101970	Carbon	Film	100 ohm	1/5 W	J	C2	1
R42/R43	3069222970	Carbon	Film	2.2k ohm	1/5 W	J	D1/2	2
R44	3069101970	Carbon	Film	100 ohm	1/5 W	J	E2	1
R45	3069104970	Carbon	Film	100k ohm	1/5 W	J	E2	1
R46	3069221970	Carbon	Film	220 ohm	1/5 W	J	B2	1
R47	3069103970	Carbon	Film	10k ohm	1/5 W	J	C2	1
R48	3069392970	Carbon	Film	3.9k ohm	1/5 W	J	C1	1
R49	3069104970	Carbon	Film	100k ohm	1/5 W	J	E1	1
R50	3069221970	Carbon	Film	220 ohm	1/5 W	J	B1	1
R51	3069103970	Carbon	Film	10k ohm	1/5 W	J	C2	1
R52	3069392970	Carbon	Film	3.9k ohm	1/5 W	J	B/C1	1
R53		Not used !						
R54	3069221970	Carbon	Film	220 ohm	1/5 W	J	D2	1
R55	3069103970	Carbon	Film	10k ohm	1/5 W	J	C2	1
R56	3069392970	Carbon	Film	3.9k ohm	1/5 W	J	C2	1
R57		Not used !						
R58	3069103970	Carbon	Film	10k ohm	1/5 W	J	C2	1
R59	3069392970	Carbon	Film	3.9k ohm	1/5 W	J	C2	1
R60	3069562970	Carbon	Film	5.6k ohm	1/5 W	J	B2	1
R61	3069182970	Carbon	Film	1.8k ohm	1/5 W	J	B2	1
R62	3069104970	Carbon	Film	100k ohm	1/5 W	J	B2	1
R63	3069562970	Carbon	Film	5.6k ohm	1/5 W	J	B2	1
R64	3069182970	Carbon	Film	1.8k ohm	1/5 W	J	B1	1
R65	3069104970	Carbon	Film	100k ohm	1/5 W	J	B1	1
R66	3069562970	Carbon	Film	5.6k ohm	1/5 W	J	D2	1
R67	3069182970	Carbon	Film	1.8k ohm	1/5 W	J	D2	1
R68	3069104970	Carbon	Film	100k ohm	1/5 W	J	D2	1
R69	3069221970	Carbon	Film	220 ohm	1/5 W	J	C/D2	1
R70	3069562970	Carbon	Film	5.6k ohm	1/5 W	J	D2	1
R71	3069182970	Carbon	Film	1.8k ohm	1/5 W	J	D2	1
R72	3069104970	Carbon	Film	100k ohm	1/5 W	J	D1/2	1
R73/R74	3069684970	Carbon	Film	680k ohm	1/5 W	J	A2	2
R75/R76	3069684970	Carbon	Film	680k ohm	1/5 W	J	A1	2
R77	3069182970	Carbon	Film	1.8k ohm	1/5 W	J	E2	1
R78	3069272970	Carbon	Film	2.7k ohm	1/5 W	J	E2	1
R79	3069182970	Carbon	Film	1.8k ohm	1/5 W	J	E1	1
R80	3069272970	Carbon	Film	2.7k ohm	1/5 W	J	E1	1
R81	3069271970	Carbon	Film	270 ohm	1/5 W	J	E2	1

Ref. No	Part No.	Description					Position	Q'ty
R82	3069391970	Carbon Film	390 ohm	1/5 W	J		E1/2	1
R83	3069271970	Carbon Film	270 ohm	1/5 W	J		E1	1
R84	3069391970	Carbon Film	390 ohm	1/5 W	J		E1	1
R85	3069101970	Carbon Film	100 ohm	1/5 W	J		B2	1
R86/R87	3069101970	Carbon Film	100 ohm	1/5 W	J		C2	2
R88	3069101970	Carbon Film	100 ohm	1/5 W	J		E2	1
R89	3069152970	Carbon Film	1.5k ohm	1/5 W	J		B2	1
Capacitors								
C1	3519104935	Ceramic	0.1 uF	50 V	Axial	F	A1	1
C2	3519104935	Ceramic	0.1 uF	50 V	Axial	F	E1	1
C3/C4	3479347971	Electrolytic	4.7 uF	50V	SG	M	B1	2
C5/C6	3519101935	Ceramic	100 pF	50V	Axial	K	B1	2
C7/C8	3479347971	Electrolytic	4.7 uF	50V	SG	M	B1	2
C9/C10	3519101935	Ceramic	100 pF	50V	Axial	K	B1	2
C11/C12	3479347971	Electrolytic	4.7 uF	50V	SG	M	D1	2
C13	3519101935	Ceramic	100 pF	50V	Axial	K	D1	1
C14	3519220935	Ceramic	22 pF	50V	Axial	K	D1	1
C15	3519101935	Ceramic	100 pF	50V	Axial	K	D1	1
C16/C17	3479347971	Electrolytic	4.7 uF	50V	SG	M	D1	2
C18	3519220935	Ceramic	22 pF	50V	Axial	K	D1	1
C19/C20	3519101935	Ceramic	100 pF	50V	Axial	K	D1	2
C21	3519101935	Ceramic	100 pF	50V	Axial	K	B1	1
C22	3479347041	Electrolytic	47 uF	25 V	SG	M	B2	1
C23	3519470935	Ceramic	47 pF	50V	Axial	K	B1	1
C24	3519220935	Ceramic	22 pF	50V	Axial	K	B1	1
C25	3519101935	Ceramic	100 pF	50V	Axial	K	B1	1
C26	3479347041	Electrolytic	47 uF	25 V	SG	M	A2	1
C27	3519470935	Ceramic	47 pF	50V	Axial	K	B1	1
C28	3519220935	Ceramic	22 pF	50V	Axial	K	B1	1
C29	3519101935	Ceramic	100 pF	50V	Axial	K	D1	1
C30	3479347041	Electrolytic	47 uF	25 V	SG	M	C2	1
C31	3519470935	Ceramic	47 pF	50V	Axial	K	D1	1
C32	3519101935	Ceramic	100 pF	50V	Axial	K	D1	1
C33	3479347041	Electrolytic	47 uF	25 V	SG	M	E2	1
C34	3519470935	Ceramic	47 pF	50V	Axial	K	D1	1
C35/C36	3519470935	Ceramic	47 pF	50V	Axial	K	B2	2
C37	3479310121	Electrolytic	100 uF	10V	SG	M	B2	1
C38	3519470935	Ceramic	47 pF	50V	Axial	K	B2	1
C39	3519470935	Ceramic	47 pF	50V	Axial	K	B1/2	1
C40	3479310121	Electrolytic	100 uF	10V	SG	M	B1	1
C41	3519470935	Ceramic	47 pF	50V	Axial	K	D1	1
C42		Not used !						
C43	3519470935	Ceramic	47 pF	50V	Axial	K	D2	1
C44	3479310121	Electrolytic	100 uF	10V	SG	M	D2	1
C45/C46	3519470935	Ceramic	47 pF	50V	Axial	K	D2	2
C47	3479310121	Electrolytic	100 uF	10V	SG	M	D2	1

Ref. No	Part No.	Description					Position	Q'ty
C48	3679392120	Mylar	0.0039 uF	100 V		J	A2	1
C49	3679682120	Mylar	0.0068 uF	100 V		J	A2	1
C50	3479347041	Electrolytic	47 uF	25 V	SG	M	B2	1
C51	3679392120	Mylar	0.0039 uF	100 V		J	A1	1
C52	3679682120	Mylar	0.0068 uF	100 V		J	A2	1
C53/C54	3479347041	Electrolytic	47 uF	25 V	SG	M	C2	2
C55	3479347041	Electrolytic	47 uF	25 V	SG	M	D2	1
C56	3679102120	Mylar	0.001 uF	100 V		J	A2	1
C57	3679182120	Mylar	0.0018 uF	100 V		J	A2	1
C58	3679102120	Mylar	0.001 uF	100 V		J	A1	1
C59	3679182120	Mylar	0.0018 uF	100 V		J	A1	1
C60 - C62	3479310971	Electrolytic	1 uF	50V	SG	M	E2	3
C63	3479310971	Electrolytic	1 uF	50V	SG	M	E1	1
Others								
Jack1	4438113520	Jack RCA 2P, Gold Floating GND					B1/2	1
Jack2	4438113520	Jack RCA 2P, Gold Floating GND					D1/2	1
	8525008010	Holder LED					C2	1
	4009600400	P.C.Board Front						1
Assembly PCB, Main								
Integrated Circuits								
IC101/IC102	2168000114	KA4558, Dual OP Amp.					A3	2
IC103	2108000208	Photocoupler, PC-17T2					C4	1
IC104	2168802001	KA339, Comparator					E4	1
IC105	2138002111	KA7500, PWM Control					E2	1
Transistors								
Q101	2028416123	NPN	2SC	4467(O)		Silicon	A5	1
Q102	2028416123	NPN	2SC	4467(O)		Silicon	A1	1
Q103	2208606104	NPN	BKT	3198Y		Silicon	A4	1
Q104/Q105	2208606104	NPN	BKT	3198Y		Silicon	A2	2
Q106	2208606104	NPN	BKT	3198Y		Silicon	A4	1
Q107	2228406120	NPN	KTC	1027Y		Silicon	A4	1
Q108	2228406120	NPN	KTC	1027Y		Silicon	A2	1
Q109	2208606107	NPN	KTC	3206Y		Silicon	A2	1
Q110	2208606107	NPN	KTC	3206Y		Silicon	A4	1
Q111	2028416123	NPN	2SC	4467(O)		Silicon	A5	1
Q112	2208206102	PNP	KTA	1024Y		Silicon	A4	1
Q113	2028416123	NPN	2SC	4467(O)		Silicon	A1	1
Q114	2208206102	PNP	KTA	1024Y		Silicon	A2	1
Q115	2228106107	PNP	KTA	1023Y		Silicon	A4	1
Q116	2228106107	PNP	KTA	1023Y		Silicon	A2	1
Q117	2008622110	NPN	2SC	4137		Silicon	A5	1
Q118	2008622110	NPN	2SC	4137		Silicon	A1	1

Ref. No	Part No.	Description			Position	Q'ty
Q119	2238002106	PNP	KSR 2206(T)	Silicon	A/B3	1
Q120	2208622113	NPN	DTC 323TL TL2	Silicon	A3	1
Q121	2028406124	PNP	KTB 1366Y	Silicon	B3	1
Q122	2028406118	NPN	KTD 2058Y	Silicon	B3	1
Q123	2028116109	NPN	2SA 1694(O)	Silicon	B5	1
Q124	2028116109	NPN	2SA 1694(O)	Silicon	B1	1
Q125	2208606104	NPN	KTC 3198Y	Silicon	B2	1
Q126	2208606104	NPN	KTC 3198Y	Silicon	B4	1
Q127	2208606104	NPN	KTC 3198Y	Silicon	B2	1
Q128	2208606104	NPN	KTC 3198Y	Silicon	B4	1
Q129	2238002106	PNP	KSR 2206(T)	Silicon	B3	1
Q130	2028116109	NPN	2SA 1694(O)	Silicon	B5	1
Q131	2028116109	NPN	2SA 1694(O)	Silicon	B1	1
Q132	2208606107	NPN	KTC 3206Y	Silicon	B3	1
Q133	2208606104	NPN	BKT 3198Y	Silicon	B3	1
Q134	2208606107	NPN	KTC 3206Y	Silicon	B3	1
Q135	2208606104	NPN	BKT 3198Y	Silicon	B3	1
Q136	2028416123	NPN	2SC 4467(O)	Silicon	B5	1
Q137	2028416123	NPN	2SC 4467(O)	Silicon	B1	1
Q138	2208606104	NPN	BKT 3198Y	Silicon	B4	1
Q139	2208606104	NPN	BKT 3198Y	Silicon	B2	1
Q140	2028416123	NPN	2SC 4467(O)	Silicon	C5	1
Q141	2028416123	NPN	2SC 4467(O)	Silicon	C1	1
Q142	2228406120	NPN	KTC 1027Y	Silicon	C4	1
Q143	2208206102	PNP	KTA 1024Y	Silicon	C4	1
Q144	2008622110	NPN	2SC 4137	Silicon	C5	1
Q145	2008622110	NPN	2SC 4137	Silicon	C1	1
Q146	2238002106	PNP	KSR 2206(T)	Silicon	C4	1
Q147	2228406120	NPN	KTC 1027Y	Silicon	C2	1
Q148	2208606104	NPN	KTC 3198Y	Silicon	C4	1
Q149	2228106107	PNP	KTA 1023Y	Silicon	C2	1
Q150	2208206102	PNP	KTA 1024Y	Silicon	C2	1
Q151	2208606104	NPN	KTC 3198Y	Silicon	C4	1
Q152	2028116109	NPN	2SA 1694(O)	Silicon	C5	1
Q153	2028116109	NPN	2SA 1694(O)	Silicon	C1	1
Q154	2228106107	PNP	KTA 1023Y	Silicon	C4	1
Q155	2028116109	NPN	2SA 1694(O)	Silicon	D5	1
Q156	2028116109	NPN	2SA 1694(O)	Silicon	D1	1
Q157	2208606104	NPN	KTC 3198Y	Silicon	E4	1
Q158	2238002106	PNP	KSR 2206(T)	Silicon	E4	1
Q159	2208206105	PNP	BKT 1266Y	Silicon	E3/4	1
Q160	2208206105	PNP	BKT 1266Y	Silicon	E4	1
Q161	2238402106	NPN	KSR 1206(T)	Silicon	E2	1
Q162	2208706001	NPN	KTN 2222(A)	Silicon	E1/2	1
Q163	2208706001	NPN	KTN 2222(A)	Silicon	E4	1
Q164	2208206105	PNP	BKT 1266Y	Silicon	E2	1
Q165	2208706100	PNP	KTN 2907(A)	Silicon	E1/2	1
Q166	2208706100	PNP	KTN 2907(A)	Silicon	E4	1

Ref. No	Part No.	Description		Position	Q'ty
Q167-Q169	2028802002	FET N-CH IRFZ44	Silicon	E5	3
Q170-Q172	2028802002	FET N-CH IRFZ44	Silicon	E1	3
Q173	2008613115	PNP uPA 75HA	Silicon	B3	1
Q174	2008613115	PNP uPA 75HA	Silicon	A4	1
Q175	2008613115	PNP uPA 75HA	Silicon	B2	1
Q176	2008613115	PNP uPA 75HA	Silicon	A2	1
Q177/Q178	2208622113	NPN DTC 323TL TL2	Silicon	A4	2
Q179	2208622113	NPN DTC 323TL TL2	Silicon	A2	1
Q180	2228422101	NPN 2SD 1858	Silicon	E4	1
Diodes					
D101	2058322101	Switching 1N4148M	60V/500mW	A4	1
D102	2058322101	Switching 1N4148M	60V/500mW	A1	1
D103	2058322101	Switching 1N4148M	60V/500mW	A4	1
D104	2058322101	Switching 1N4148M	60V/500mW	A2	1
D105	2258599112	Zener UZ-20BSC	20V/500mW	A2	1
D106	2258599112	Zener UZ-20BSC	20V/500mW	A4	1
D107	2058322101	Switching 1N4148M	60V/500mW	A2	1
D108/D109	2058322101	Switching 1N4148M	60V/500mW	A4	2
D110	2058322101	Switching 1N4148M	60V/500mW	A2	1
D111	2058322101	Switching 1N4148M	60V/500mW	A4	1
D112	2058322101	Switching 1N4148M	60V/500mW	A2	1
D113	2058322101	Switching 1N4148M	60V/500mW	B3	1
D114	2258599103	Zener UZ-5.1BSB	5.1V/500mW	A2	1
D115/D116	2258599109	Zener UZ-15BSC	15V/500mW	B3	2
D117	2258599103	Zener UZ-5.1BSB	5.1V/500mW	B4	1
D118/D119	2058322101	Switching 1N4148M	60V/500mW	B3	2
D120	2258599112	Zener UZ-20BSC	20V/500mW	B4	1
D121	2258599112	Zener UZ-20BSC	20V/500mW	B2	1
D122	2058322101	Switching 1N4148M	60V/500mW	B3	1
D123	2058322101	Switching 1N4148M	60V/500mW	B2	1
D124/D125	2058322101	Switching 1N4148M	60V/500mW	B4	2
D126	2058322101	Switching 1N4148M	60V/500mW	C2	1
D127	2058322101	Switching 1N4148M	60V/500mW	C4	1
D128/D129	2058322101	Switching 1N4148M	60V/500mW	C2	2
D130	2058322101	Switching 1N4148M	60V/500mW	C4	1
D131	2058116106	Fast Recovery Rectifier, CTU-32R	250V/10A	D4	1
D132	2058116105	Fast Recovery Rectifier, CTU-32S	250V/10A	D1	1
D133-D135	2058322101	Switching 1N4148M	60V/500mW	E4	3
D136	2058322101	Switching 1N4148M	60V/500mW	E2	1
D137	2058322101	Switching 1N4148M	60V/500mW	E3	1
D138/D139	2058100136	Rectifier 1N5402	3A/200W	E3	2
D140	2058322101	Switching 1N4148M	60V/500mW	E4	1
D141	2258599103	Zener UZ-5.1BSB	5.1V/500mW	E4	1
D142	2258599116	Zener UZ-12BSC	12V/500mW	E4	1
D143	2258599127	Zener DZ-18BM	18V/500mW	E2	1
D144	2058322101	Switching 1N4148M	60V/500mW	E3	1

Ref. No	Part No.	Description					Position	Q'ty
D145	2258599107	Zener	UZ-9.1BSC	9.1V/500mW			E4	1
D146	2058322101	Switching	1N4148M	60V/500mW			E3	1
D147	2258599103	Zener	UZ-5.1BSB	5.1V/500mW			E4	1
D148	2258599107	Zener	UZ-9.1BSC	9.1V/500mW			E3	1
D149	2258599107	Zener	UZ-9.1BSC	9.1V/500mW			E4	1
D150	2058322101	Switching	1N4148M	60V/500mV			E4	1
D151	2258599121	Zener	DZ-6.8BH	6.8V/500mW			E2	1
D152	2258599103	Zener	DZ5.1BSB	5.1V/500mW			E3	1
Coils								
L101/L102	2898000180	Choke Trans. Bar 10x30, 4.6uH					E3	2
L103	2648647984	Coil Inductor, 4.7uH					E3	1
L104	2648602066	Choke Coil Ring, 60uH					D1	1
L105	2648602066	Choke Coil Ring, 60uH					D5	1
L106/L107	2648001860	Coil Inductor, 0.9uH					B4	2
L108/L109	2648001860	Coil Inductor, 0.9uH					B2	2
Capacitors								
C101	3479310121	Electrolytic	100 uF	10 V	SG	M	A4	1
C102	3519100935	Ceramic	10 pF	50 V	Axial	K	A2	1
C103	3519100935	Ceramic	10 pF	50 V	Axial	K	A4	1
C104	3679224297	Mylar	0.22 uF	63 V	Mini	K	A2	1
C105	3519056935	Ceramic	5.6 pF	50 V	Axial	K	A2	1
C106	3519056935	Ceramic	5.6 pF	50 V	Axial	K	A4	1
C107	3479347071	Electrolytic	47 uF	50 V	SG	M	A4	1
C108	3679102120	Mylar	0.001 uF	100 V		K	A4	1
C109	3479310971	Electrolytic	1 uF	50 V	SG	M	A2	1
C110	3679224297	Mylar	0.22 uF	63 V	Mini	K	A4	1
C111	3679102120	Mylar	0.001 uF	100 V		J	A2	1
C112/C113	3479310121	Electrolytic	100 uF	10 V	SG	M	A3	2
C114/C115	3479347071	Electrolytic	47 uF	50 V	SG	M	A2	2
C116	3679223120	Mylar	0.022 uF	100 V		J	A3	1
C117	3479347071	Electrolytic	47 uF	50 V	SG	M	A4	1
C118	3479310121	Electrolytic	100 uF	10 V	SG	M	A2	1
C119	3479310971	Electrolytic	1 uF	50 V	SG	M	A4	1
C120	3519101935	Ceramic	100 pF	50 V	Axial	K	A4	1
C121/C122	3679223120	Mylar	0.022 uF	100 V		J	A3	2
C123	3519101935	Ceramic	100 pF	50 V	Axial	K	A2	1
C124	3519470935	Ceramic	47 pF	50 V	Axial	K	A4	1
C125	3679223120	Mylar	0.022 uF	100 V		J	A3	1
C126	3519470935	Ceramic	47 pF	50 V	Axial	K	A3	1
C127	3519471935	Ceramic	470 pF	50 V	Axial	K	A2	1
C128	3519471935	Ceramic	470 pF	50 V	Axial	K	A4	1
C129	3519101935	Ceramic	100 pF	50 V	Axial	K	A4	1
C130	3519101935	Ceramic	100 pF	50 V	Axial	K	A2	1
C131	3479310061	Electrolytic	10 uF	35 V	SG	M	A4	1
C132/C133	3479310061	Electrolytic	10 uF	35 V	SG	M	A3	2

Ref. No	Part No.	Description					Position	Q'ty
C134	3679224297	Mylar	0.22 uF	63 V	Mini	K	A3	1
C135	3679224297	Mylar	0.22 uF	63 V	Mini	K	A2	1
C136	3519331935	Ceramic	330 pF	50 V	Axial	K	A4	1
C137	3479310061	Electrlytic	10 uF	35 V	SG	M	A3	1
C138/C139	3479322131	Electrlytic	220 uF	16 V	SG	M	A3	2
C140	3519331935	Ceramic	330 pF	50 V	Axial	K	A1	1
C141	3519223520	Ceramic	0.022 uF	25 V	Axial	J	B2	1
C142	3519223520	Ceramic	0.022 uF	25 V	Axial	J	B4	1
C143	3679473120	Mylar	0.047 uF	100 V		J	B4	1
C144	3679473120	Mylar	0.047 uF	100 V		J	B2	1
C145	3679473120	Mylar	0.047 uF	100 V		J	B4	1
C146	3519223520	Ceramic	0.022 uF	25 V	Axial	J	B4	1
C147	3479310171	Electrolytic	100 uF	50 V	SG	M	B3	1
C148/C149	3519471935	Ceramic	470 pF	50 V	Axial	K	B3	2
C150	3679473120	Mylar	0.047 uF	100 V		J	B2	1
C151	3519100935	Ceramic	10 pF	50 V	Axial	K	B4	1
C152	3519100935	Ceramic	10 pF	50 V	Axial	K	B2	1
C153	3519223520	Ceramic	0.022 uF	25 V	Axial	J	B2	1
C154	3679102120	Mylar	0.001 uF	100 V		J	B3	1
C155	3519056935	Ceramic	5.6 pF	50 V	Axial	K	B4	1
C156	3679102120	Mylar	0.001 uF	100 V		J	B3	1
C157	3479347071	Electrolytic	47 uF	50 V	SG	M	B3	1
C158	3479310121	Electrolytic	100 uF	10 V	SG	M	B3	1
C159	3479310971	Electrolytic	1 uF	50V	SG	M	B4	1
C160	3479310971	Electrolytic	1 uF	50 V	SG	M	B2	1
C161	3479310121	Electrolytic	100 uF	10 V	SG	M	B3	1
C162	3479347071	Electrolytic	47 uF	50 V	SG	M	B3	1
C163	3519056935	Ceramic	5.6 pF	50 V	Axial	K	B2	1
C164	3679224297	Mylar	0.22 uF	63 V	Mini	K	B4	1
C166	3479347071	Electrolytic	47 uF	50 V	SG	M	C2	1
C167	3479347071	Electrolytic	47 uF	50 V	SG	M	C4	1
C168	3679224297	Mylar	0.22 uF	63 V	Mini	K	C2	1
C169	3519101935	Ceramic	100 pF	50 V	Axial	K	C4	1
C170/C171	3419568296	Electrolytic	6800 uF	40 V	HC	M	C3	2
C172	3519331935	Ceramic	330 pF	50 V	Axial	K	C5	1
C173	3519101935	Ceramic	100 pF	50 V	Axial	K	C2	1
C174	3479322121	Electrolytic	220 uF	10 V	SG	M	C4	1
C175	3519331935	Ceramic	330 pF	50 V	Axial	K	C1	1
C176	3519101935	Ceramic	100 pF	50V	Axial	K	C2	1
C177	3479322121	Electrolytic	220 uF	10 V	SG	M	C4	1
C178	3519101935	Ceramic	100 pF	50 V	Axial	K	C4	1
C179/C180	3679104297	Mylar	0.1 uF	63 V	Mini	K	C3	2
C181	3519471935	Ceramic	470 pF	50 V	Axial	K	D5	1
C182	3519471935	Ceramic	470 pF	50 V	Axial	K	D1	1
C183	3479310061	Electrolytic	10 uF	35 V	SG	M	E4	1
C184/C185	3479310121	Electrolytic	100 uF	10 V	SG	M	E2	2
C186	3679104297	Mylar	0.1 uF	63 V	Mini	K	E2	1
C187	3479310131	Electrolytic	100 uF	16 V	SG	M	E3	1

Ref. No	Part No.	Description					Position	Q'ty
C188	3479310131	Electrolytic	100 uF	16 V	SG	M	E4	1
C189	3679102120	Mylar	0.001 uF	100 V		J	E2	1
C190	3479310971	Electrolytic	1 uF	50 V	SG	M	E4	1
C191	3479310061	Electrolytic	10 uF	35 V	SG	M	E4	1
C192	3479310131	Electrolytic	100 uF	16 V	SG	M	E2	1
C193	3679104297	Mylar	0.1 uF	63 V	Mini	K	E3	1
C194	3679103120	Mylar	0.01 uF	100 V		J	E2	1
C195	3679223120	Mylar	0.022 uF	100 V		J	D2	1
C196	3679223120	Mylar	0.022 uF	100 V		J	D4	1
C197	3419547202	Electrolytic	4700 uF	16 V	HE	M	D2	1
C198	3419547202	Electrolytic	4700 uF	16 V	HE	M	D4	1
C199	3519223520	Ceramic	0.022 uF	25 V	Axial	J	C3	1
C200	3479310061	Electrolytic	10 uF	35 V	SG	M	A4	1
C201	3479310061	Electrolytic	10 uF	35 V	SG	M	B2	1
C202	3479310061	Electrolytic	10 uF	35 V	SG	M	A2	1
Resistors								
R101	3069473970	Carbon Film	47k ohm	1/5 W	J		A2	1
R102	3069182970	Carbon Film	1.8k ohm	1/5 W	J		A2	1
R103	3069182970	Carbon Film	1.8k ohm	1/5 W	J		A4	1
R104	3069473970	Carbon Film	47k ohm	1/5 W	J		A4	1
R105	3059108682	Cement	0.1 ohm	3 W	K		A1	1
R106	3059108682	Cement	0.1 ohm	3 W	K		A5	1
R107	3069561970	Carbon Film	560 ohm	1/5 W	J		A4	1
R108	3069183970	Carbon Film	18k ohm	1/5 W	J		A1	1
R109	3069103970	Carbon Film	10k ohm	1/5 W	J		A3	1
R110	3069561970	Carbon Film	560 ohm	1/5 W	J		A2	1
R111	3069183970	Carbon Film	18k ohm	1/5 W	J		A4	1
R112	3069121970	Carbon Film	120 ohm	1/5 W	J		A1	1
R113	3069183970	Carbon Film	18k ohm	1/5 W	J		A2	1
R114	3069183970	Carbon Film	18k ohm	1/5 W	J		A4	1
R115	3069122970	Carbon Film	1.2k ohm	1/5 W	J		A4	1
R116	3069121970	Carbon Film	120 ohm	1/5 W	J		A4	1
R117	3069152970	Carbon Film	1.5k ohm	1/5 W	J		A2	1
R118	3069561970	Carbon Film	560 ohm	1/5 W	J		A1	1
R119	3069561970	Carbon Film	560 ohm	1/5 W	J		A5	1
R120	3069122970	Carbon Film	1.2k ohm	1/5 W	J		A2	1
R121	3069152970	Carbon Film	1.5k ohm	1/5 W	J		A4	1
R122	3069562970	Carbon Film	5.6k ohm	1/5 W	J		A3	1
R123	3069821970	Carbon Film	820 ohm	1/5 W	J		A2	1
R124	3069121970	Carbon Film	120 ohm	1/5 W	J		A2	1
R125	3069561970	Carbon Film	560 ohm	1/5 W	J		A1	1
R126	3069121970	Carbon Film	120 ohm	1/5 W	J		A4	1
R127	3029100470	Metal Film	10 ohm	1 W	J		A5	1
R128	3029100470	Metal Film	10 ohm	1 W	J		A1	1
R129	3069821970	Carbon Film	820 ohm	1/5 W	J		A4	1
R130	3059108682	Cement	0.1 ohm	3 W	K		A1	1

Ref. No	Part No.	Description				Position	Q'ty
R131	3069151970	Carbon Film	150 ohm	1/5 W	J	A5	1
R132/R133	3069103970	Carbon Film	10k ohm	1/5 W	J	A3	2
R134	3069121970	Carbon Film	120 ohm	1/5 W	J	A4	1
R135	3069823970	Carbon Film	82k ohm	1/5 W	J	A3	1
R136	3069153970	Carbon Film	15k ohm	1/5 W	J	A4	1
R137	3069121970	Carbon Film	120 ohm	1/5 W	J	A2	1
R138	3029100470	Metal Film	10 ohm	1 W	J	A5	1
R139	3069823970	Carbon Film	82k ohm	1/5 W	J	A2	1
R140	3069562970	Carbon Film	5.6k ohm	1/5 W	J	A3	1
R141	3069103970	Carbon Film	10k ohm	1/5 W	J	A3	1
R142	3029151970	Carbon Film	150 ohm	1/5 W	J	A4	1
R143	3059108682	Cement	0.1 ohm	3 W	K	A5	1
R144	3069562970	Carbon Film	5.6k ohm	1/5 W	J	A2	1
R145	3069332970	Carbon Film	3.3k ohm	1/5 W	J	A3	1
R146	3069473970	Carbon Film	47k ohm	1/5 W	J	A2	1
R147	3069473970	Carbon Film	47k ohm	1/5 W	J	A4	1
R148	3069331970	Carbon Film	330 ohm	1/5 W	J	A4	1
R149	3069272970	Carbon Film	2.7k ohm	1/5 W	J	A2	1
R150	3069103970	Carbon Film	10k ohm	1/5 W	J	A3	1
R151	3069102970	Carbon Film	1k ohm	1/5 W	J	A2	1
R152	3069102970	Carbon Film	1k ohm	1/5 W	J	A4	1
R153	3069103970	Carbon Film	10k ohm	1/5 W	J	A2	1
R154	3069184970	Carbon Film	180k ohm	1/5 W	J	A3	1
R155	3069151970	Carbon Film	150 ohm	1/5 W	J	A1	1
R156	3069104970	Carbon Film	100k ohm	1/5 W	J	A2	1
R157	3069104970	Carbon Film	100k ohm	1/5 W	J	A4	1
R158	3069184970	Carbon Film	180k ohm	1/5 W	J	A2	1
R159	3069472970	Carbon Film	4.7k ohm	1/5 W	J	A3	1
R160	3069331970	Carbon Film	330 ohm	1/5 W	J	A2	1
R161	3069153970	Carbon Film	15k ohm	1/5 W	J	A2	1
R162	3029100470	Metal Film	10 ohm	1 W	J	A1	1
R163	3069472970	Carbon Film	4.7k ohm	1/5 W	J	A2	1
R164	3069561970	Carbon Film	560 ohm	1/5 W	J	A5	1
R165	3069102970	Carbon Film	1k ohm	1/5 W	J	A1	1
R166	3069331970	Carbon Film	330 ohm	1/5 W	J	A1	1
R167	3069102970	Carbon Film	1k ohm	1/5 W	J	A3	1
R168	3069272970	Carbon Film	2.7k ohm	1/5 W	J	A1	1
R169	3069102970	Carbon Film	1k ohm	1/5 W	J	A4	1
R170	3069331970	Carbon Film	330 ohm	1/5 W	J	A5	1
R171	3069151970	Carbon Film	150 ohm	1/5 W	J	A2	1
R172	3069102970	Carbon Film	1k ohm	1/5 W	J	A3/4	1
R173	3069102970	Carbon Film	1k ohm	1/5 W	J	A5	1
R174	3069272970	Carbon Film	2.7k ohm	1/5 W	J	A5	1
R175	3069104970	Carbon Film	100k ohm	1/5 W	J	A3/4	1
R176	3029100470	Metal Film	10 ohm	1 W	J	A5	1
R177	3059108682	Cement	0.1 ohm	3 W	K	A/B1	1
R178	3069102970	Carbon Film	1k ohm	1/5 W	J	A3	1
R179	3029100470	Metal Film	10 ohm	1 W	J	A5	1

Ref. No	Part No.	Description				Position	Q'ty
R180	3069104970	Carbon Film	100k ohm	1/5 W	J	B3	1
R181	3059108682	Cement	0.1 ohm	3 W	K	A5	1
R182	3069123970	Carbon Film	12k ohm	1/5 W	J	B2	1
R183	3029100470	Metal Film	10 ohm	1 W	J	B4	1
R184	3069183970	Carbon Film	18k ohm	1/5 W	J	B4	1
R185/R186	3029152470	Metal Film	1.5k ohm	1 W	J	B3	2
R187	3069104970	Carbon Film	100k ohm	1/5 W	J	B2	1
R188	3029100470	Metal Film	10 ohm	1 W	J	B1	1
R189	3069104970	Carbon Film	100k ohm	1/5 W	J	B4	1
R190	3029100470	Metal Film	10 ohm	1 W	J	B2	1
R191	3029100470	Metal Film	10 ohm	1 W	J	B1	1
R192	3069183970	Carbon Film	18k ohm	1/5 W	J	B2	1
R193	3029100470	Metal Film	10 ohm	1 W	J	B4/5	1
R194	3069105970	Carbon Film	1M ohm	1/5 W	J	B3	1
R195	3029100470	Metal Film	10 ohm	1 W	J	B1	1
R196	3069223970	Carbon Film	22k ohm	1/5 W	J	B2	1
R197	3059108682	Cement	0.1 ohm	3 W	K	B5	1
R198	3069183970	Carbon Film	18k ohm	1/5 W	J	B4	1
R199	3069682970	Carbon Film	6.8k ohm	1/5 W	J	B3	1
R200	3069123970	Carbon Film	12k ohm	1/5 W	J	B4	1
R201	3059108682	Cement	0.1 ohm	3 W	K	B1	1
R202	3069223970	Carbon Film	22k ohm	1/5 W	J	B4	1
R203		Not used !					
R204	3029100470	Metal Film	10 ohm	1 W	J	B4	1
R205	3069223970	Carbon Film	22k ohm	1/5 W	J	B3	1
R206	3029100470	Metal Film	10 ohm	1 W	J	B4	1
R207	3069102970	Carbon Film	1k ohm	1/5 W	J	B3	1
R208	3069102970	Carbon Film	1k ohm	1/5 W	J	B2/3	1
R209/R210	3069473970	Carbon Film	47k ohm	1/5 W	J	B3	2
R211	3059108682	Cement	0.1 ohm	3 W	K	B1	1
R212	3069121970	Carbon Film	120 ohm	1/5 W	J	B3	1
R213	3069152970	Carbon Film	1.5k ohm	1/5 W	J	B3	1
R214	3069561970	Carbon Film	560 ohm	1/5 W	J	B3	1
R215	3069183970	Carbon Film	18k ohm	1/5 W	J	B4	1
R216	3069183970	Carbon Film	18k ohm	1/5 W	J	B2	1
R217	3069561970	Carbon Film	560 ohm	1/5 W	J	B3	1
R218	3069152970	Carbon Film	1.5k ohm	1/5 W	J	B3	1
R219	3069121970	Carbon Film	120 ohm	1/5 W	J	B3	1
R220	3029100470	Metal Film	10 ohm	1 W	J	B1/2	1
R221	3029100470	Metal Film	10 ohm	1 W	J	B2	1
R222	3069473970	Carbon Film	47k ohm	1/5 W	J	B4	1
R223	3069182970	Carbon Film	1.8k ohm	1/5 W	J	B3	1
R224	3059108682	Cement	0.1 ohm	3 W	K	B5	1
R225	3069182970	Carbon Film	1.8k ohm	1/5 W	J	B3	1
R226	3069151970	Carbon Film	150 ohm	1/5 W	J	B3	1
R227	3069821970	Carbon Film	820 ohm	1/5 W	J	B3	1
R228	3069183970	Carbon Film	18k ohm	1/5 W	J	B2	1
R229	3069821970	Carbon Film	820 ohm	1/5 W	J	B3	1

Ref. No	Part No.	Description				Position	Q'ty
R230	3069561970	Carbon Film	560 ohm	1/5 W	J	B1	1
R231	3069183970	Carbon Film	18k ohm	1/5 W	J	B2	1
R232	3069122970	Carbon Film	1.2k ohm	1/5 W	J	B4	1
R233	3069473970	Carbon Film	47k ohm	1/5 W	J	B2	1
R234	3069151970	Carbon Film	150 ohm	1/5 W	J	C3	1
R235	3069121970	Carbon Film	120 ohm	1/5 W	J	B4	1
R236	3069561970	Carbon Film	560 ohm	1/5 W	J	B5	1
R237	3029100470	Metal Film	10 ohm	1 W	J	B1	1
R238	3069561970	Carbon Film	560 ohm	1/5 W	J	B1	1
R239	3029100470	Metal Film	10 ohm	1 W	J	B5	1
R240	3069122970	Carbon Film	1.2k ohm	1/5 W	J	B2	1
R241	3069151970	Carbon Film	150 ohm	1/5 W	J	C3	1
R242	3069121970	Carbon Film	120 ohm	1/5 W	J	B1	1
R243	3069183970	Carbon Film	18k ohm	1/5 W	J	C4	1
R244	3059108682	Cement	0.1 ohm	3 W	K	C1	1
R245	3029100470	Metal Film	10 ohm	1 W	J	C5	1
R246	3069153970	Carbon Film	15k ohm	1/5 W	J	C2	1
R247	3069561970	MetalFilm	560 ohm	1/5 W	J	C5	1
R248	3059108682	Cement	0.1 ohm	3 W	K	C5	1
R249	3069153970	Carbon Film	15k ohm	1/5 W	J	C4	1
R250	3069121970	Carbon Film	120 ohm	1/5 W	J	C4	1
R251	3029100470	Metal Film	10 ohm	1 W	J	C1	1
R252	3069272970	Carbon Film	2.7k ohm	1/5 W	J	C1	1
R253	3069102970	Carbon Film	1k ohm	1/5 W	J	C1	1
R254	3069682970	Carbon Film	6.8k ohm	1/5 W	J	C4	1
R255/R256	3069331970	Carbon Film	330 ohm	1/5 W	J	C1	2
R257	3069331970	Carbon Film	330 ohm	1/5 W	J	C5	1
R258	3069102970	Carbon Film	1k ohm	1/5 W	J	C5	1
R259	3069272970	Carbon Film	2.7k ohm	1/5 W	J	C5	1
R260	3069151970	Carbon Film	150 ohm	1/5 W	J	C4	1
R261	3069121970	Carbon Film	120 ohm	1/5 W	J	C2	1
R262	3059108682	Cement	0.1 ohm	3 W	K	C1	1
R263	3029100470	MetalFilm	10 ohm	1 W	J	C5	1
R264	3069331970	Carbon Film	330 ohm	1/5 W	J	C4	1
R265	3059108682	Cement	0.1 ohm	3 W	K	C5	1
R266	3069182970	Carbon Film	1.8k ohm	1/5 W	J	C4	1
R267	3069471970	Carbon Film	470 ohm	1/5 W	J	C4	1
R268/R269	3029100470	Metal Film	10 ohm	1 W	J	C1	2
R270	3029100470	Metal Film	10 ohm	1 W	J	C5	1
R271	3059108682	Cement	0.1 ohm	3 W	K	C1	1
R272	3059108682	Cement	0.1 ohm	3 W	K	C5	1
R273	3029101470	Metal Film	100 ohm	1 W	J	D1	1
R274	3029101470	Metal Film	100 ohm	1 W	J	D5	1
R275	3069471970	Carbon Film	470 ohm	1/5 W	J	E4	1
R276	3069224970	Carbon Film	220k ohm	1/5 W	J	E4	1
R277	3069332970	Carbon Film	3.3k ohm	1/5 W	J	E2	1
R278	3069394970	Carbon Film	390k ohm	1/5 W	J	E2	1
R279	3069101970	Carbon Film	100 ohm	1/5 W	J	E5	1

Ref. No	Part No.	Description	Position	Q'ty
R280	3069472970	Carbon Film 4.7k ohm 1/5 W J	E4	1
R281	3069332970	Carbon Film 3.3k ohm 1/5 W J	E4	1
R282	3069332970	Carbon Film 3.3k ohm 1/5 W J	E2	1
R283	3069103970	Carbon Film 10k ohm 1/5 W J	E4	1
R284	3069101970	Carbon Film 100 ohm 1/5 W J	E1	1
R285	3069222970	Carbon Film 2.2k ohm 1/5 W J	E4	1
R286	3069104970	Carbon Film 100k ohm 1/5 W J	E2	1
R287	3069623970	Carbon Film 62k ohm 1/5 W J	E2	1
R288	3069222970	Carbon Film 2.2k ohm 1/5 W J	E4	1
R289	3069563970	Carbon Film 56k ohm 1/5 W J	E4	1
R290	3069272970	Carbon Film 2.7k ohm 1/5 W J	E4	1
R291	3069243970	Carbon Film 24k ohm 1/5 W J	E4	1
R292	3069101970	Carbon Film 100 ohm 1/5 W J	E5	1
R293	3069272970	Carbon Film 2.7k ohm 1/5 W J	E4	1
R294	3069103970	Carbon Film 10k ohm 1/5 W J	E4	1
R295	3069243970	Carbon Film 24k ohm 1/5 W J	E4	1
R296	3069183970	Carbon Film 18k ohm 1/5 W J	E2	1
R297	3069103970	Carbon Film 10k ohm 1/5 W J	E2	1
R298	3069123970	Carbon Film 12k ohm 1/5 W J	E4	1
R299	3069153970	Carbon Film 15k ohm 1/5 W J	E4	1
R300	3069272970	Carbon Film 2.7k ohm 1/5 W J	E4	1
R301	3069101970	Carbon Film 100 ohm 1/5 W J	E1	1
R302	3069471970	Carbon Film 470 ohm 1/5 W J	E4	1
R303	3069101970	Carbon Film 100 ohm 1/5 W J	E2	1
R304	3069102970	Carbon Film 1k ohm 1/5 W J	E1	1
R305	3069473970	Carbon Film 47k ohm 1/5 W J	E3	1
R306	3069562970	Carbon Film 5.6k ohm 1/5 W J	E2	1
R307	3069222970	Carbon Film 2.2k ohm 1/5 W J	E2	1
R308	3069473970	Carbon Film 47k ohm 1/5 W J	E4	1
R309	3069330970	Carbon Film 33 ohm 1/5 W J	E4	1
R310	3069331970	Carbon Film 330 ohm 1/5 W J	E2	1
R311	3069473970	Carbon Film 47k ohm 1/5 W J	E3/4	1
R312	3069471970	Carbon Film 470 ohm 1/5 W J	E4	1
R313	3069102970	Carbon Film 1k ohm 1/5 W J	E5	1
R314	3069331970	Carbon Film 330 ohm 1/5 W J	E2	1
R315	3069154970	Carbon Film 150k ohm 1/5 W J	E2	1
R316	3069101970	Carbon Film 100 ohm 1/5 W J	E5	1
R317	3069103970	Carbon Film 10k ohm 1/5 W J	E3/4	1
R318	3069103970	Carbon Film 10k ohm 1/5 W J	E4	1
R319	3069332970	Carbon Film 3.3k ohm 1/5 W J	E2	1
R320	3069102970	Carbon Film 1k ohm 1/5 W J	E2	1
R321	3069222970	Carbon Film 2.2k ohm 1/5 W J	E2	1
R322	3069822970	Carbon Film 8.2k ohm 1/5 W J	E2	1
R323	3069102970	Carbon Film 1k ohm 1/5 W J	E3/4	1
R324	3069101970	Carbon Film 100 ohm 1/5 W J	E1	1
R325	3069471970	Carbon Film 470 ohm 1/5 W J	E4	1
R326	3069101970	Carbon Film 100 ohm 1/5 W J	E4	1
R327	3029100470	Metal Film 10 ohm 1 W J	D2	1

Ref. No	Part No.	Description	Position	Q'ty
R328	3029100470	Metal Film 10 1 W J	D4	1
Semi-Fixed Variable Resistors				
VR101	3248010243	EVN-DJAA03B13, 1k(B), Idling Current Adjustment	C4	1
VR102	3248010243	EVN-DJAA03B13, 1k(B), Idling Current Adjustment	A4	1
VR103	3248010243	EVN-DJAA03B13, 1k(B), Idling Current Adjustment	C1	1
VR104	3248010243	EVN-DJAA03B13, 1k(B), Idling Current Adjustment	A1	1
Connectors				
CNT101	4428513470	Connector Plug, "L" Angle 5268-07	A3	1
CNT102	4428513470	Connector Plug, "L" Angle 5268-07	A3	1
CNT103	4428525800	Connector Plug, AC S-4, 4P	B4	1
CNT104	4428525800	Connector Plug, AC S-4, 4P	B2	1
Thermistors				
NTC1	2438203003	Thermistor, KT5D54F-C0055, 50k, Black	D1	1
NTC2	2438203003	Thermistor, KT5D54F-C0055, 50k, Black	D5	1
Transformer				
T101	2888103750	Trans Ring		1
Others				
	5508724215	Fuse Auto, 30A/32V		1
	4462100000	Terminal Ass'y 3P, Fuse Holder		1
	4462000630	Connector Ass'y Speker 4P, Gold		1
	7318000310	DC, Brushless Fan, KD1204P		1
	1608501810	Silicon Rubber		1
	4009600100	P.C.Board Main		1
Accessory Kits				
	4471000190	Accessory Speaker Input 10P, 5557-10R		1
	4471000240	Accessory Source Ground 10P, 5557-10R		1
	8159140203	Screw, #1WPTC 4x20B		1
	8099150201	Screw, HEX NSP/W 5x20Y		1
	8209550011	Nut Flange Toothed M5		1

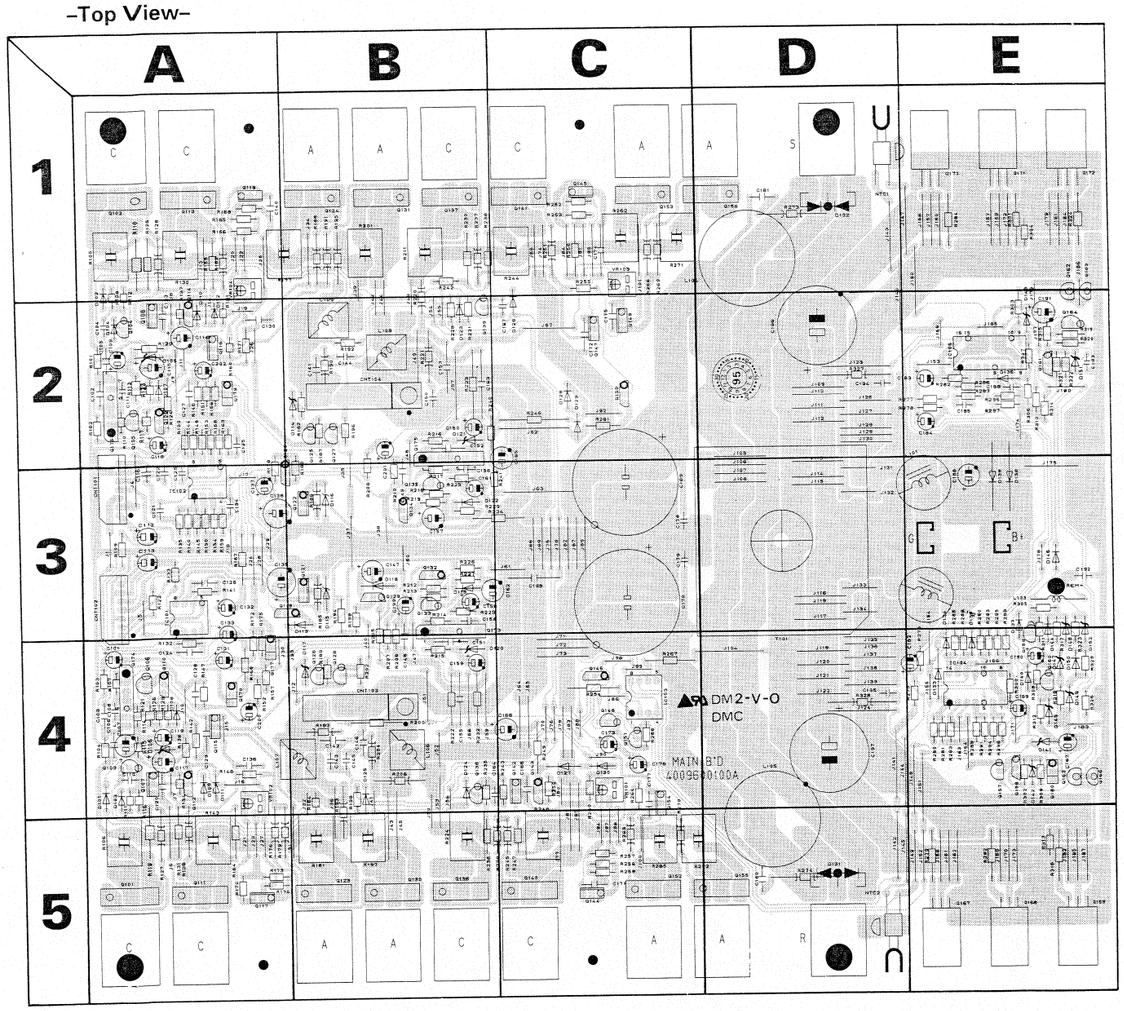
Note: Resistor / Capacitor Tolerance

D: ±0.5%, F: ±1%, J: ±5%, K: ±10%, M: ±20%, Z:+80%, -20%

Top & Bottom View of P.C.Boards

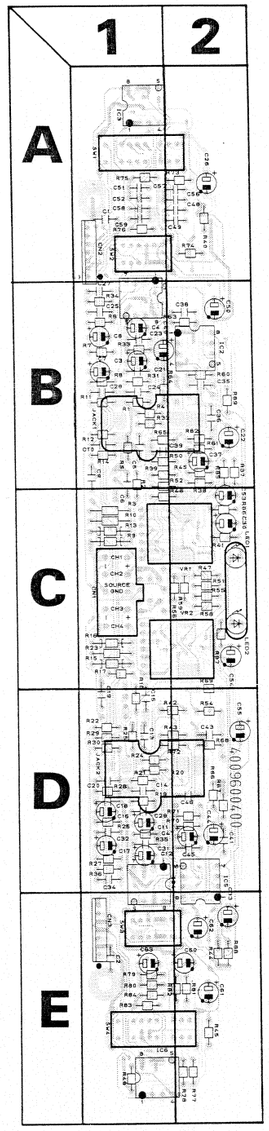
1. MAIN P.C.BOARD 4009600100

–Top View–

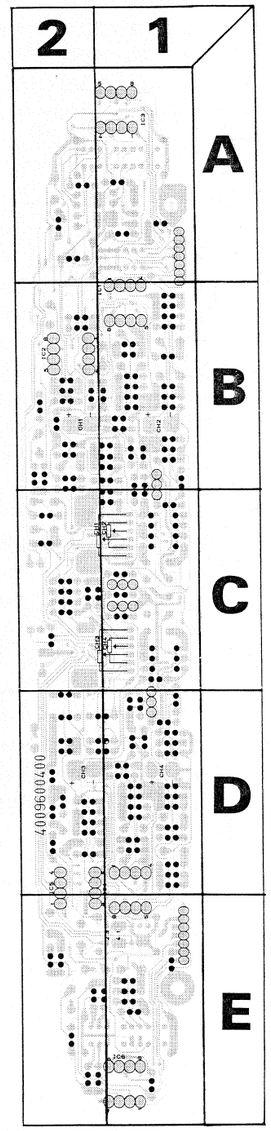


2. FRONT P.C.BOARD 4009600400

–Top View–

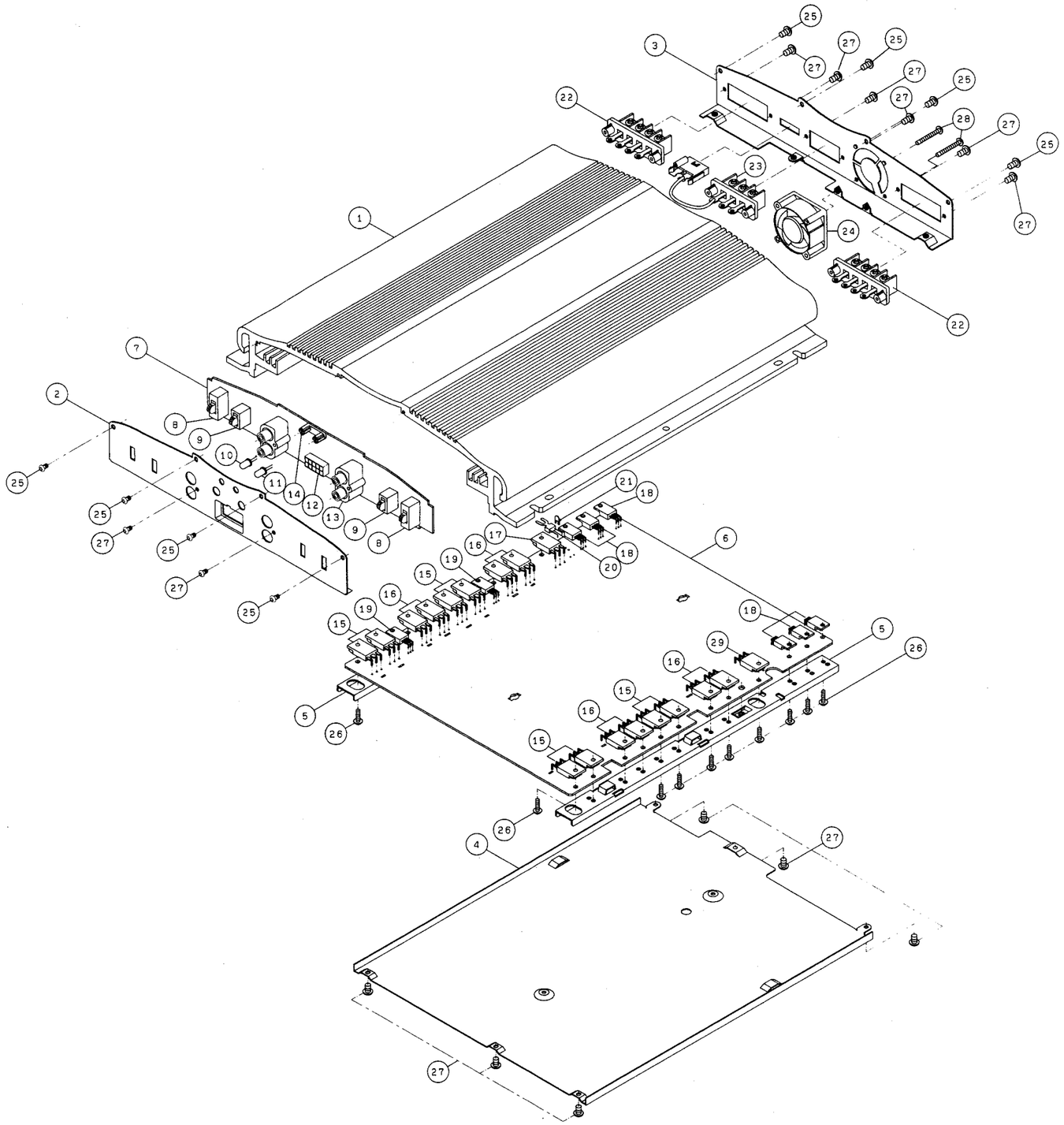


–Bottom View–

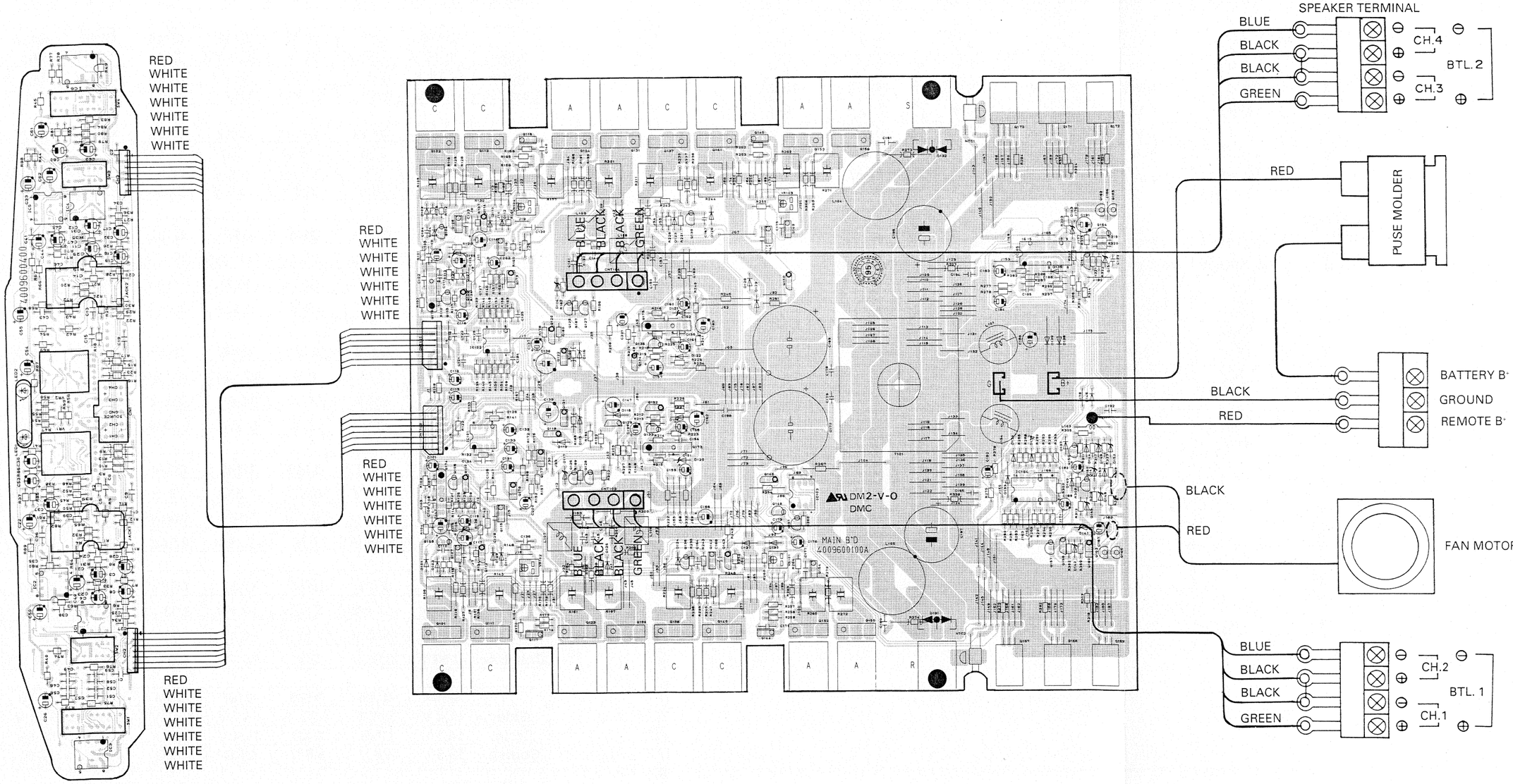


Exploded View & Part List of Chassis

Ref. No.	Part No.	Description	Q'ty
1	047501O00313	Heatsink	1
2	046122902612	Chassis, Front	1
3	046122902712	Chassis, Back	1
4	046122902512	Cover, Bottom	1
5	6503O28010	Bracket TR.	2
6	4009600100	Main P.C.Board	1
7	4009600400	Front P.C.Board	1
8	4618O09410	Switch Slide, SSSA043G	2
9	4618O08010	Switch Slide, SSSA042G	2
10	2308220306	LED, SLR54GC3, Green	1
11	2308220109	LED, SLR54URC3, RED	1
12	4428527675	Connector Plug, 10P, 5566-10A	1
13	4438113520	Jack RCA, 2P	2
14	8525O08010	Holder LED	1
15	2028407109	Power TR, NPN, KTD718	8
16	2028107106	Power TR, PNP, KTB688	8
17	2058116105	Diode, CTU32S	1
18	2028802002	TR, FET, IRFZ44	6
19	2008622110	TR, NPN, 2SC4137	4
20	2438203003	Thermistor, KT5D54F-C	2
21	6505120910	Guide Sensor	2
22	4462O00630	Speaker Terminal Ass'y, 4P, Gold	1
23	4462100000	Terminal Ass'y, 3P	1
24	7318O00310	DC Brushless, Fan, KD1204P	1
25	8109230084	Screw, #2BTC 3x8N	8
26	8015130141	Screw P/SW PM 3x14Y	24
27	8119930084	Screw, #2PS 3x8N	14
28	8119430254	Screw, #2BS 3x25N	2
29	2058116106	Diode, CTU32R	1



Point to Point Wiring Diagram



IC & Transistor Voltage Chart

1. ICs

1-1 Front

Pin No.	IC1 No Signal	IC2 No Signal	IC3 No Signal	IC4 No Signal	IC5 No Signal	IC6 No Signal
1	0 V	0 V	0 V	0 V	0 V	0 V
2	0 V	0 V	0 V	0 V	0 V	0 V
3	0 V	0 V	0 V	0 V	0 V	0 V
4	-14.6 V	-14.6 V	-15.0 V	-14.6 V	-14.6 V	-15.0 V
5	0 V	0 V	0 V	0 V	0 V	0 V
6	0 V	0 V	0 V	0 V	0 V	0 V
7	0 V	0 V	0 V	0 V	0 V	0 V
8	14.6 V	14.6 V	15.0 V	14.6 V	14.6 V	15.0 V

1-2 Main

Pin No.	IC101 No Signal	IC102 No Signal	IC103 No Signal	IC104 No Signal	IC105 No Signal	
1	0 V	10 mV	30 V	0 V	GND	
2	0 V	6.8 mV	29.7 V	0 V	2.43 V	
3	GND	1.3 mV	0 V	5 V	0 V	
4	-15 V	-15 V	0 V	1.48 V	0.13 V	
5	GND	1.3 mV	GND	0.64 V	1.6 V	
6	0 V	6.8 mV	22.8 V	2.24 V	3.7 V	
7	0 V	10 mV	0 V	0.64 V	GND	
8	15 V	15 V	5 V	3 V	14.3 V	
9				0.64 V	5.6 V	
10				2.47 V	5.6 V	
11				0 V	14.3 V	
12				GND	14.3 V	
13				0 V	5 V	
14				0 V	5 V	
15					5 V	
16					GND	

2. Transistors

	Q101	Q102	Q103	Q104	Q105	Q106	Q107	Q108	Q109
Emitter	-42.5 mV	-42.5 mV	0 V	0 V	-29.2 V	-29.2 V	0.53 V	0.53 V	-29.15 V
Base	30.6 V	30.6 V	-30 V	-30 V	-28.5 V	-28.5 V	30.6 V	30.6 V	-1.19 V
Collector	0.53 V	0.53 V	0 V	0 V	-28.6 V	-28.6 V	1.06 V	1.06 V	-28.5 V

	Q110	Q111	Q112	Q113	Q114	Q115	Q116	Q117	Q118
Emitter	-29.15 V	-42.5 mV	28 V	-42.5 mV	28 V	-0.63 V	-0.63 V	-1.19 V	-1.19 V
Base	-1.19 V	30.6 V	1.06 V	30.6 V	1.06 V	-30.6 V	-30.6 V	1.06 V	1.06 V
Collector	-28.5 V	0.53 V	27.4 V	0.53 V	27.4 V	-1.19 V	-1.19 V	0.58 V	0.58 V

	Q119	Q120	Q121	Q122	Q123	Q124	Q125	Q126	Q127
Emitter	0 V	GND	-15 V	15 V	-47 mV	-47 mV	-30.6 V	-30.6 V	-30.6 V
Base	-30.6 V	0 V	-30.6 V	30.6 V	-30.6 V	-30.6 V	-30.6 V	-30.6 V	-30 V
Collector	0 V	-8 V	-15.6 V	15.6 V	-0.63 V	-0.63 V	-29.85 V	-29.85 V	-30.6 V

	Q128	Q129	Q130	Q131	Q132	Q133	Q134	Q135	Q136
Emitter	-30.6 V	30.5 V	-47 mV	-47 mV	-29.15 V	-29.2 V	-29.15 V	-29.2 V	42.5 mV
Base	-30 V	-8 V	-30.6 V	-30.6 V	-1.19 V	-28.5 V	-1.19 V	-28.5 V	30.6 V
Collector	-30.6 V	30 V	-0.63 V	-0.63 V	-28.5 V	-28.6 V	-28.5 V	-28.6 V	0.53 V

	Q137	Q138	Q139	Q140	Q141	Q142	Q143	Q144	Q145
Emitter	-42.5 mV	0 V	0 V	-42.5 mV	-42.5 mV	0.53 V	28 V	-1.19 V	-1.19 V
Base	30.6 V	30. V	30. V	30.6 V	30.6 V	30.6 V	1.06 V	1.06 V	1.06 V
Collector	0.53 V	0 V	0 V	0.53 V	0.53 V	1.06 V	27.4 V	0.58 V	0.58 V

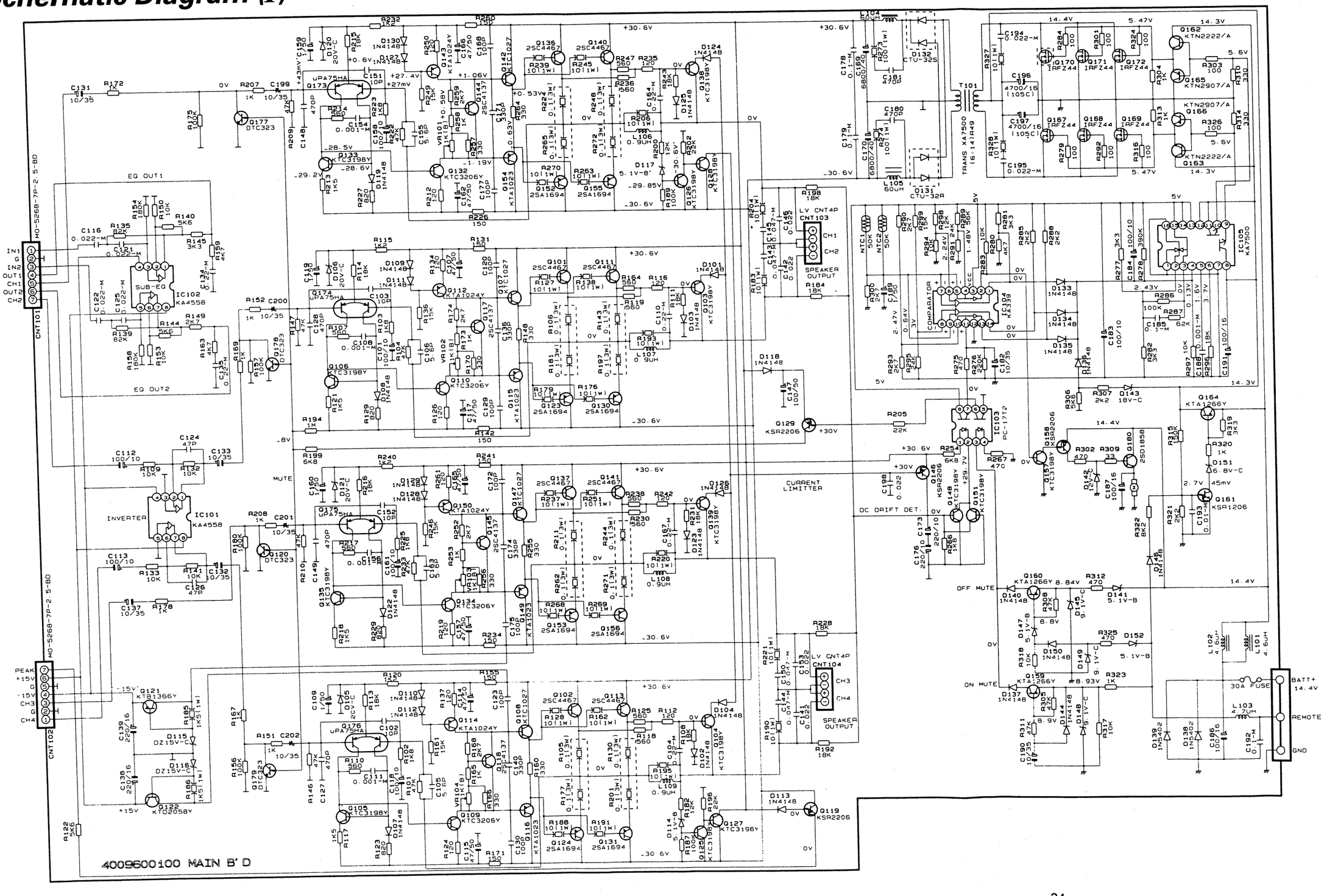
	Q146	Q147	Q148	Q149	Q150	Q151	Q152	Q153	Q154
Emitter	30.6 V	0.53 V	GND	-0.63 V	28 V	0 V	-47 mV	-47 mV	-0.63 V
Base	0 V	30.6 V	29.7 V	-30.6 V	1.06 V	29.7 V	-30.6 V	-30.6 V	-30.6 V
Collector	30 V	1.06 V	0 V	-1.19 V	27.4V	GND	0.63 V	-0.63 V	-1.19 V

	Q155	Q156	Q157	Q158	Q159	Q160	Q161	Q162	Q163
Emitter	-47 mV	-47 mV	GND	14.4 V	8.93 V	8.84V	GND	5.47 V	5.47 V
Base	-30.6 V	-30.6 V	14.36 V	0 V	0 V	0V	29.7 V	14.3 V	14.3 V
Collector	-0.63 V	-0.63 V	0 V	14.4 V	8.9 V	8.8V	2.7 V	5.6 V	5.6 V

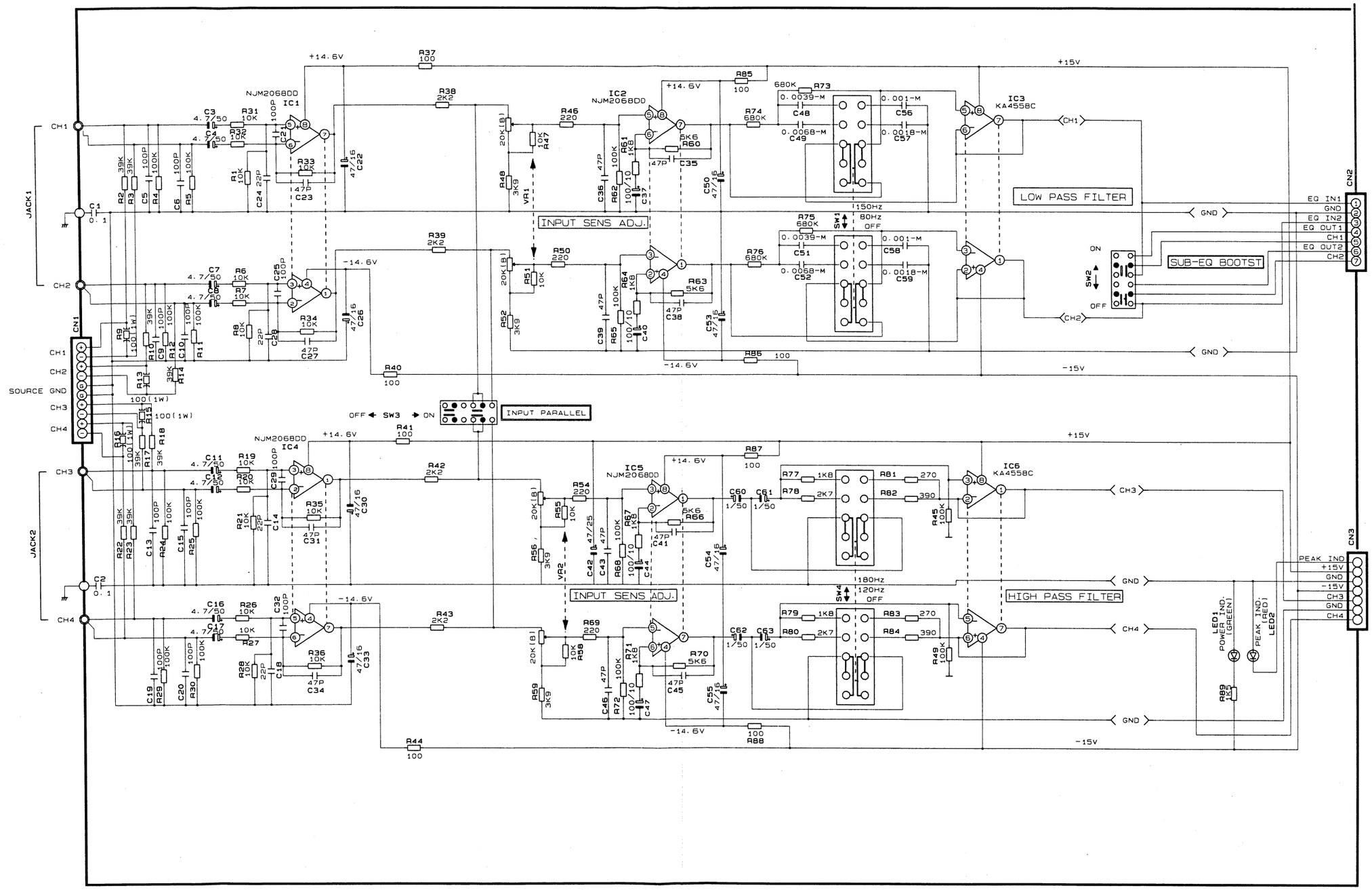
	Q164	Q165	Q166	Q167	Q168	Q169	Q170	Q171	Q172
Gate	14.4 V	5.47 V	5.47 V	5.47 V	5.47 V	5.47 V	5.47 V	5.47 V	5.47 V
Drain	14.3 V	GND	GND	14.4 V	14.4 V	14.4 V	14.4 V	14.4 V	14.4 V
Source	13.5 V	5.6 V	5.6 V	GND	GND	GND	GND	GND	GND

	Q173	Q174	Q175	Q176	Q177	Q178	Q179	Q180	
Emitter	0.6 V	0.6 V	0.6 V	0.6 V	GND	GND	GND	0 V	
Base	-28.5 V	-28.5 V	-28.5 V	-28.5 V	0 V	0 V	0 V	14.4 V	
Collector	43 mV	43 mV	43 mV	43 mV	-8 V	-8 V	-8 V	0 V	

Schematic Diagram (I)



Schematic Diagram (II)



NOTES

1. Resistance value are indicated ohms unless otherwise specified [K=1,000 M=1,000,000]
2. Capacitance value are shown in microfarades unless otherwise noted [P=micro-microfarade]